

INTERNATIONAL SEARCH REPORT

Inte al Application No
PCT/JP2004/052696

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G11B7/013 G11B20/10

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 G11B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| X | US 4 866 692 A (SAITO ET AL) 12 September 1989 (1989-09-12) column 16, line 18 - column 17, line 27 figure 13 | 1-4, 8, 9, 11 |
| A | | 5-7, 10, 12 |
| X | US 5 818 805 A (KOBAYASHI ET AL) 6 October 1998 (1998-10-06) column 1, line 53 - column 2, line 52 column 5, line 42 - column 6, line 42 column 17, line 4 - column 18, line 18 column 22, line 17 - column 23, line 15 figures 1, 20-24, 33 | 1, 2, 11 |
| A | | 3-10, 12 |
| | ----- -/- | |

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| A | EP 1 059 630 A (MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD) 13 December 2000 (2000-12-13) column 8, paragraph 27 - column 9, paragraph 31 column 12, paragraph 41 - column 13, paragraph 43 column 16, paragraph 56 - column 18, paragraph 70 figures 2,3,5,6,8-11 ----- | 1-12 |
| A | EP 1 282 122 A (SAMSUNG ELECTRONICS CO., LTD) 5 February 2003 (2003-02-05) column 2, paragraph 15 - column 2, paragraph 16 column 2, paragraph 23 - column 3, paragraph 26 column 5, paragraph 35 - column 5, paragraph 40 column 6, paragraph 45 - column 7, paragraph 46 column 9, paragraph 57 - column 9, paragraph 60 column 11, paragraph 65 - column 12, paragraph 72 figures 6,7 ----- | 1-12 |
| A | US 5 712 837 A (HORIGOME ET AL) 27 January 1998 (1998-01-27) column 1, line 62 - column 2, line 7 column 3, line 59 - column 4, line 45 column 6, line 17 - column 7, line 2 column 8, line 16 - column 8, line 27 figures 1,4 ----- | 1-12 |

INTERNATIONAL SEARCH REPORT

 Internal Application No
 PC1/1B2004/052696

| Patent document cited in search report | | Publication date | Patent family member(s) | Publication date |
|---|---|---------------------|----------------------------|---------------------|
| US 4866692 | A | 12-09-1989 | JP 2810035 B2 | 15-10-1998 |
| | | | JP 63053722 A | 08-03-1988 |
| | | | DE 3727681 A1 | 17-03-1988 |
| | | | KR 9101275 B1 | 26-02-1991 |
| | | | US RE35435 E | 28-01-1997 |
| US 5818805 | A | 06-10-1998 | AT 173856 T | 15-12-1998 |
| | | | AU 661720 B2 | 03-08-1995 |
| | | | AU 2684892 A | 03-09-1993 |
| | | | AU 662807 B2 | 14-09-1995 |
| | | | AU 3574493 A | 03-09-1993 |
| | | | CA 2108359 A1 | 15-08-1993 |
| | | | CA 2108457 A1 | 15-08-1993 |
| | | | DE 69227680 D1 | 07-01-1999 |
| | | | DE 69227680 T2 | 06-05-1999 |
| | | | EP 0580864 A1 | 02-02-1994 |
| | | | EP 0580873 A1 | 02-02-1994 |
| | | | EP 0773536 A2 | 14-05-1997 |
| | | | ES 2124743 T3 | 16-02-1999 |
| | | | JP 3277585 B2 | 22-04-2002 |
| | | | JP 6076303 A | 18-03-1994 |
| | | | WO 9316467 A1 | 19-08-1993 |
| | | | WO 9316468 A1 | 19-08-1993 |
| | | | KR 254509 B1 | 01-05-2000 |
| | | | US 5557592 A | 17-09-1996 |
| | | | US 5566158 A | 15-10-1996 |
| | | | US 5615193 A | 25-03-1997 |
| | | | US 5809004 A | 15-09-1998 |
| | | | US 5748582 A | 05-05-1998 |
| | | | US 5724330 A | 03-03-1998 |
| EP 1059630 | A | 13-12-2000 | EP 1059630 A1 | 13-12-2000 |
| | | | US 6791926 B1 | 14-09-2004 |
| | | | CN 1114905 C | 16-07-2003 |
| | | | WO 0028535 A1 | 18-05-2000 |
| | | | JP 2000200418 A | 18-07-2000 |
| | | | TW 457476 B | 01-10-2001 |
| | | | US 2004022151 A1 | 05-02-2004 |
| | | | US 2004017752 A1 | 29-01-2004 |
| EP 1282122 | A | 05-02-2003 | EP 1282122 A2 | 05-02-2003 |
| | | | EP 1282117 A2 | 05-02-2003 |
| | | | EP 1288922 A2 | 05-03-2003 |
| | | | BR 9902936 A | 14-03-2000 |
| | | | CN 1320909 A ,C | 07-11-2001 |
| | | | CN 1320910 A ,C | 07-11-2001 |
| | | | CN 1320906 A ,C | 07-11-2001 |
| | | | CN 1320911 A ,C | 07-11-2001 |
| | | | CN 1320912 A ,C | 07-11-2001 |
| | | | CN 1245329 A ,C | 23-02-2000 |
| | | | EP 0977184 A2 | 02-02-2000 |
| | | | HK 1038819 A1 | 08-10-2004 |
| | | | HK 1038820 A1 | 01-04-2005 |
| | | | HK 1038821 A1 | 03-12-2004 |
| | | | HK 1038822 A1 | 03-12-2004 |
| | | | HK 1038823 A1 | 08-04-2005 |
| | | | ID 25963 A | 16-11-2000 |
| | | | JP 2000048362 A | 18-02-2000 |

INTERNATIONAL SEARCH REPORT

International Application No
PCT/IB2004/052696

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|---|---------------------|----------------------------|---------------------|
| EP 1282122 | A | JP 2001143265 A | 25-05-2001 |
| | | JP 2002237037 A | 23-08-2002 |
| | | JP 2002237043 A | 23-08-2002 |
| | | JP 2002237038 A | 23-08-2002 |
| | | RU 2195716 C2 | 27-12-2002 |
| | | SG 93212 A1 | 17-12-2002 |
| | | SG 108853 A1 | 28-02-2005 |
| | | US 6631110 B1 | 07-10-2003 |
| | | US 2004156292 A1 | 12-08-2004 |
| US 5712837 | A | JP 3307786 B2 | 24-07-2002 |
| | | JP 8171724 A | 02-07-1996 |
| | | CN 1133472 A ,C | 16-10-1996 |